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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,044	01/14/2002	Jeremy E. Dahl	005950-774	5442

7590

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EXAMINER

KUNEMUND, ROBERT M

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/047,044

Applicant(s)

DAHL ET AL.

Examiner

Robert M Kunemund

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 58-93 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 58-93 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

### DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 58, 59, 61 to 63, 72 to 80 and 89 to 91 are rejected under 35

U.S.C. 102(b) as being anticipated by Fuesser et al.

The Fuesser et al reference teaches a formation of a diamond film. A substrate is placed in a CVD chamber. The chamber is heated and a coupling energy is created in the source space. A gases nucleation material is flowed into the reactor and caused to deposit on the substrate. The nucleation material is a diamondiod and is sublimed prior to entry into the chamber. Then process gases can be flowed into the chamber consisting of methane, hydrogen and an inert gas, note, cols. 3 and 4.

Claims 58, 59, 61 to 63, 72 to 80 and 89 to 91 are rejected under 35

U.S.C. 102(b) as being anticipated by Miyanaga et al.

The Miyanaga et al reference teaches a formation of a diamond film. A substrate is placed in a CVD chamber. The chamber is heated and a coupling energy is created in the source space. A gases nucleation material is flowed into the reactor and caused to deposit on the substrate. The nucleation material is a diamondiod and is sublimed prior to entry into the chamber. Then process gases can be flowed into the chamber consisting of methane, hydrogen and an inert gas, note, examples.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 60, 64 to 67, and 81 to 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyanaga et al or Fuesser et al.

The Miyanaga et al and Fuesser et al references are relied on for the same reasons as stated, supra, and differ from the instant claims in the type of diamondiod and nucleation rates. However, in the absence of unobvious of results, it would have been obvious to one of ordinary skill in the art to determine through routine experimentations the optimum, operable type of diamondiod in the Miyanaga et al or Fuesser et al references in order to deposit a material with the same lattices and spacing as the diamond films thus increasing nucleation rates of the films.

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Claims 68 to 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyanaga et al or Fuesser et al both in view of Kulisch.

The Miyanaga et al and Fuesser et al references are relied on for the same reasons as stated, supra, and differ from the instant claims in the type of substrates. However, the Kulisch reference teaches diamond deposition on various substrates including nickel and silicon, note page 135. It would have been obvious to one of ordinary skill in the art to modify the Miyanaga et al and Fuesser et al references by the teachings of the Kulisch reference to use different substrate in order to produce diamonds with different uses and characteristics.

Claims 92 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyanaga et al or Fuesser et al both in view of Gruen (B 2.3).

The Miyanaga et al and Fuesser et al references are relied on for the same reasons as stated, supra, and differ from the instant claims in the type of diamond. However, the Gruen reference teaches ultrananocrystalline diamond deposition using a nucleation material with the  $sp^3$  and  $sp^2$ , note, page 308. It would have been obvious to one of ordinary skill in the art to modify the Miyanaga et al and Fuesser et al references by the teachings of the Gruen reference to grow ultrananocrystalline diamonds by using the diamondiod nucleation materials since the diamondiod has the necessary  $sp^3$  and  $sp^2$  characteristics.

Examiner's Remarks

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The remaining references are merely cited of interest as showing the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M Kunemund whose telephone number is 703-308-1091. The examiner can normally be reached on 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ben Utech can be reached on 703-308-3636. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

RMK  
December 23, 2002



**ROBERT KUNEMUND**  
**PRIMARY PATENT EXAMINER**  
**A.U. 117**